



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,369	01/23/2004	Kuniaki Nakano	KOY-15	7580
20311	7590	06/06/2005	EXAMINER	
MUSERLIAN, LUCAS AND MERCANTI, LLP 475 PARK AVENUE SOUTH 15TH FLOOR NEW YORK, NY 10016			SCHILLING, RICHARD L	
			ART UNIT	PAPER NUMBER
			1752	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/763,369

Applicant(s)

NAKANO ET AL.

Examiner

Richard L. Schilling

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Art Unit 1752

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in (1) an application for patent, published under Section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit 1752

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hosoi '974. Hosoi '974 (see particularly paragraphs 43, 44, 51, 58-62, 78-80, 113; Example 1; Figures 1 and 5) discloses phosphor crystals and a support wherein the crystals are in the shape of columns with diameters of 1-100 microns and voids that are less than 10 microns wide. The crystals are formed by vapor deposition of metal halide phosphor materials within the scope of Formula 3 of instant claim 4 as are the crystals of the instant claims. Example 1 of Hosoi discloses crystals of 8 microns aligned thickly. The diameters of the phosphor crystals and voids in Hosoi fall within the preferred ranges set forth on page 16 of applicants' specification. Therefore, the number of crystals in Hosoi would fall within the range of 50 to 4000 per 100 microns squared or it would at least be obvious to one skilled in the art to adjust the diameters of the crystals and voids in Hosoi within the preferred ranges.

2. Claims 1-13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as

obvious over Hosoi '050. Hosoi '050 (see particularly column 3, lines 20-50; column 2, lines 35-49; Example 1) discloses columns of phosphors on supports with densities of 85-97%. The phosphors include those of instant claim 4. Example 1 discloses phosphor crystals with diameters of 10 microns at 95% of the area for approximately 95 phosphor crystals per 100 microns squared. It would be obvious to one skilled in the art to adjust the diameters of the crystals and their densities in Hosoi within the disclosed density ranges of Hosoi which would provide numbers of crystals per unit area as required by the instant claims.

3. Claims 1-13 are rejected under 35 U.S.C. 102(a) and (e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Morikawa et al. '529. Morikawa et al. '529 (see particularly paragraphs 9, 10, 16-26, 38, 39, 43-46, 51, 71-74) disclose gas phase growth of phosphor crystals in column form on a support. The diameters of the phosphor crystals in the Examples are 5 microns and spaces between crystals are disclosed as preferably being not more than 5 microns in Morikawa et al. so that the number of crystals per 100 microns squared is at least 100. Alternatively, it would at least be obvious to one skilled in the art to use preferred spacings of the crystals of less than 5 microns as disclosed in Morikawa et al. in the Examples with crystal diameters of 5 microns to obtain crystals per 100

Serial No. 10/763,369

-5-

Art Unit 1752

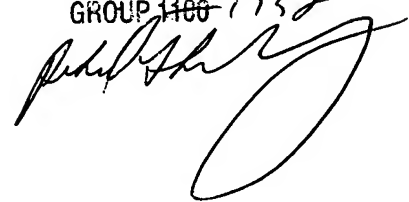
microns squared of 100 or more.

4. Any inquiry concerning this communication should be directed to Mr. Schilling at telephone number (571) 272-1335.

RLSchilling:cdc

June 2, 2005

RICHARD L. SCHILLING
PRIMARY EXAMINER
GROUP 1100-1752

A handwritten signature in black ink, appearing to read 'Richard L. Schilling', is written over the printed name and title. The signature is stylized with a large, sweeping loop at the end.